THE AMENDMENTS

In the Claims

1. (Amended) A method for ~~facilitating exploration of biological and~~ analyzing chemical genomic data, comprising:

a). providing a database in a computer readable medium comprising a plurality of standard gene expression profiles, each profile comprising a representation of the expression level of a plurality of genes in a cell exposed to a standard compound, bioassay profiles and compound information for each~~a representation~~ of the plurality of standard compounds;

b). ~~displaying a selected~~ selecting one or more standard gene expression profiles, bioassay profiles or standard compounds;

and

c). ~~displaying~~ using correlation information related to ~~said~~ the selected standard gene expression profiles, bioassay profiles or standard compounds to ~~facilitate generation of a hypothesis~~ predict a biological activity of one or more standard compounds~~; and~~

~~d). displaying relevant product information to facilitate testing said hypothesis~~.

2. (Amended) The method of claim 1, wherein said correlation information is selected from the group consisting of: identification of ~~a~~ one or more profiles similar to said selected standard gene expression profiles, identification of ~~a~~ one or more standard compounds that produces a similar profile, identification of one or more~~a~~ genes modulated in said profile, identification of a disease or disorder in which a plurality of the same genes are modulated in a similar fashion, identification of compounds having similar physical and chemical properties as the standard compounds used to generate the profile(s), identification of compounds having similar shapes, identification of compounds having similar biological activities, -identification of a gene or protein having sequence similarity to a selected gene or protein, identification of a gene or protein having a similar known function or activity, identification of ~~a~~ one or more genes or proteins subject to modulation or control by the same standard compound(s), identification of a gene or protein that belongs to the same metabolic or signal pathway, and identification of a gene or protein belonging to similar metabolic or signal pathways.

3. (Amended) The method of claim 13, wherein said relevant product information is selected from the group consisting of: information regarding a bioassay reagent useful for measuring activity of an identified enzyme, information regarding a compound useful as a positive control, information regarding a compound useful as a negative control, information regarding a kit for purifying an identified protein, information regarding antibodies for determining and/or isolating substances, information regarding a ~~compound similar to the~~ test compound useful for further study, additional data regarding gene or protein function and/or relationships, sequence data from other species, information regarding metabolic and/or signal pathways to which the gene or protein belong, information regarding a DNA microarray useful for determining expression of the gene and/or related genes, and information and analysis regarding features of a compound that are likely to be responsible for the observed activity.

4. (Original) The method of claim 3, wherein said product information further comprises a hyperlink that facilitates direct purchase of said product.

5. (Amended) The method of claim 1, wherein said database further comprises drug signatures for a plurality of standard compounds, wherein each said drug signature comprises a representation of the physical and chemical characteristics of each compound, data regarding the effect of each compound on the transcription of a plurality of genes, ~~and~~ data regarding the effect of each compound on a plurality of proteins and bioassay data regarding the in vivo effect of each compound.

6. (Amended) The method of claim 1, wherein ~~said~~ the standard gene expression profile is selected on the basis of its similarity to an experimental expression profile provided by the user.

7. (Amended) A method for analyzing ~~facilitating exploration of biological and~~ chemical genomic data, comprising:

a) providing a database in a computer readable medium comprising drug signatures for a plurality of compounds, wherein said drug signature comprise a representation of the physical and chemical characteristics of each compound, data regarding the effect of each compound on the transcription of a plurality of genes, ~~and~~ data regarding the effect of each compound on a plurality of proteins~~.~~ and bioassay data regarding the in vivo effect

of each compound;

b) ~~displaying a selected~~selecting one or more drug signatures;

and

c) ~~displaying~~ using correlation information related to said one or more drug signatures to predict a biological activity of one or more standard compounds~~facilitate generation of a hypothesis; and~~

~~d) displaying relevant product information to facilitate testing said hypothesis~~.

8. (Amended) The method of claim ~~7~~14, wherein said relevant product information is selected from the group consisting of: information regarding a bioassay reagent useful for measuring activity of an identified enzyme, information regarding a compound useful as a positive control, information regarding a compound useful as a negative control, information regarding a kit for purifying an identified protein, information regarding antibodies for determining and/or isolating substances, information regarding a ~~compound similar to the~~ test compound useful for further study, additional data regarding gene or protein function and/or relationships, sequence data from other species, information regarding metabolic and/or signal pathways to which the gene or protein belong, information regarding a DNA microarray useful for determining expression of the gene and/or related genes, and information and analysis regarding features of a compound that are likely to be responsible for the observed activity.

9. (Original) The method of claim 8, wherein said product information further comprises a hyperlink that facilitates direct purchase of said product.

10. (Amended) A system for ~~facilitating exploration of biological and~~analyzing chemical genomic data, comprising:

a database in a computer readable medium comprising a plurality of standard gene expression profiles, each profile comprising a representation of the expression level of a plurality of genes in a cell exposed to a standard compound, bioassay profiles and compound information for each of the plurality ~~and a representation~~ of ~~the~~ standard compounds;

input means for accepting data and user selections;

selection means for selecting one or more standard~~a~~ gene expression profiles, bioassay

profiles or standard compounds;

and

~~correlation selection~~ means for identifying and selecting correlation information related to said standard gene expression profiles.~~;~~

bioassay profiles or standard compounds that is useful to predict a biological activity of one or more standard compounds~~product information selection means for selecting information regarding relevant products related to said gene expression profile; and~~

~~display means for displaying information regarding said gene expression profile~~.

11. (Amended) The system of claim 10, wherein said database further comprises drug signatures for a plurality of compounds, wherein each said drug signature comprises a representation of the physical and chemical characteristics of each compound, data regarding the effect of each compound on the transcription of a plurality of genes, ~~and~~ data regarding the effect of each compound on a plurality of proteins, and bioassay data regarding the in vivo effect of each compound.

12. (Amended) A system for facilitating exploration of biological and chemical data, comprising:

a database comprising drug signatures for a plurality of compounds, wherein each said drug signature comprises a representation of the physical and chemical characteristics of each compound, data regarding the effect of each compound on the transcription of a plurality of genes, ~~and~~ data regarding the effect of each compound on a plurality of proteins, and bioassay data regarding the in vivo effect of each compound;

input means for accepting data and user selections;

selection means for selecting one or more standard ~~a~~ gene expression profiles, bioassay profiles or standard compounds;

and

~~correlation selection~~ means for identifying and selecting correlation information related to said standard gene expression profiles, bioassay profiles or standard compounds that is useful to predict a biological activity of one or more standard compounds~~;~~

~~product information selection means for selecting information regarding relevant products related~~

~~to said gene expression profile; and~~

~~display means for displaying information regarding said gene expression profile~~.

13. (New) The method of claim 1 further comprising displaying product information relevant to testing said biological activity of the one or more standard compounds.

14. (New) The method of claim 7 further comprising displaying product information relevant to testing said biological activity of the one or more standard compounds.

15. (New) The system of claim 10 further comprising means for displaying product information relevant to testing said biological activity of the one or more standard compounds.

16. (New) The system of claim 12 further comprising means for displaying product information relevant to testing said biological activity of the one or more standard compounds.

17. (New) A method for evaluating a test compound, comprising:

a) providing a database in a computer readable medium comprising a plurality of standard gene expression profiles, each profile comprising a representation of the expression level of a plurality of genes in response to a standard compound, bioassay profiles and compound information for each of the standard compounds;

b) providing a test compound gene expression profile;

c) scoring the similarity of said test compound gene expression profile to the plurality of standard gene expression profiles in the database and thereby identifying at least one standard compound in the database similar to the test compound;

d) using correlation information related to the identified standard compound to predict a biological activity of the test compound.

18. (New) The method of claim 17 wherein the bioassay profiles comprise data from screening assays, cellular assays, binding assays, enzymatic assays, animal studies and/or human studies.

19. (New) The method of claim 17 wherein the bioassay profiles comprise data regarding the in

vivo effect of each standard compound.

20. (New) The method of claim 17 wherein the biological activity of the test compound is selected from the group consisting of drug activity, toxicity, absorption, metabolism, distribution and excretion.

21. (New) The method of claim 17 wherein each of the plurality of standard gene expression profiles comprises a representation of the expression levels of a plurality of genes in response to the *in vivo* effect of a standard compound.

22. (New) The method of claim 17 wherein each of the plurality of standard gene expression profiles comprises a representation of the expression levels of a plurality of genes in a particular tissue in response to the *in vivo* effect of a standard compound.